Medical Education

Sociodemographic and Premedical School Factors Related to Postgraduate Physicians' Humanistic Performance

LAWRENCE S. LINN, PhD, *and* DENNIS W. COPE, MD, *Los Angeles, and* ALAN ROBBINS, MD, *Sepulveda, California*

In an extensive survey of postgraduate physicians in two teaching hospitals (N = 141) for their humanistic attitudes, values and behavior, all ratings of physicians' humanistic performance, including physicians' own scores on self-report measures, supervising faculty, nurses and patient ratings, were modestly but significantly correlated with each other. Sex, ethnic or racial background, year of training, marital status, number of children, Alpha-Omega-Alpha membership or number of articles published were unrelated to physicians' humanistic behavior. Several measures of humanism were positively correlated with having taken more courses in the social sciences and humanities, having had more early person-centered work experience and reporting that before medical school others had confided in them or sought their advice more frequently.

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In a landmark 1983 decision, the American Board of Internal Medicine required all postgraduate training programs in internal medicine to assess the humanistic qualities of their residents as part of the certification process.[1] The refocusing of attention of many medical educators on the importance of humanistic physician behavior is in part due to the increasing evidence that the major academic criteria used for admission of students into medical school (college grades and scores on the Medical College Admission Test) have not been good predictors of the quality of clinical practice.[2-5] One group of medical educators headed by a surgeon recently concluded that because academic achievement correlates so poorly with the clinical performance of physicians, it probably is more important to select college students for medical school who will be superior physicians than those who will be excellent medical students.[6] They argued that this selection process should be based upon traits that are important but not easily taught or learned in medical training. Among the 12 highest ranked traits of the 87 they studied, 8 were humanistic in nature—a person of unquestionable integrity, who is forthright and intellectually honest, has sustained genuine concern for patients during their illness and convalescence, is an understanding person and is motivated by idealism, compassion and service rather than money.[6] Because previous studies of the socialization process in medical school found that cynicism among students tended to increase over the training period,[7-11] selection of more humanistic applicants is therefore of even greater importance.

As the practice of medicine evolves and changes, it is clear that people recruited and selected to be the physicians of the future must be superior in both the cognitive-academic and the affective-humanistic realms. This study focuses on the latter set of skills among trainees in two southern California postgraduate training programs in internal medicine. Our purpose was to see whether certain sociodemographic and premedical school life experiences are correlated with current assessments of humanistic performance. Our definition of humanism is multidimensional and includes values, attitudes, interpersonal skills and behaviors (verbal and nonverbal), intrapsychic self-awareness and the effect a physician has on the feelings of others. Specific attributes of these dimensions include integrity, respect, compassion, empathy, patient-centeredness and an attitude that is caring, respectful and sensitive to others. Our measures of humanism will include self-reported measures and the ratings of supervising physicians, nurses and outpatients.

Physicians and Methods

Sample and Design

Two physician populations were asked to participate in the study by completing a battery of self-reported measures. The first population consisted of all 117 internal medicine house staff and faculty who had seen outpatients in an ambulatory care center in a teaching hospital (hospital A) during the 1984-1985 academic year. A total of 95 completed questionnaires was returned, for a response rate of 81%. The second population consisted of all 49 internal medicine house staff in training at a second teaching hospital (hospital B). Completed questionnaires were returned by 46, for a response rate of 94%. Thus, the total sample consisted of 141 physicians, 90% of those asked to participate. Of the respondents, 38% were interns, 23% were second-year postgraduates, 29% third-year postgraduates and 10% were faculty. Of the group, 58% were unmarried, 87% had no children, 28% were women and 27% were from a racial minority group.

In both training programs, the training director sent all

From the School of Public Health (Dr Linn), Department of Medicine (Drs Linn and Cope), Center for the Health Sciences, University of California, Los Angeles, School of Medicine, and the UCLA San Fernando Valley Training Program (Dr Robbins), Veterans Administration Medical Center, Sepulveda, California.

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Reprint requests to Lawrence S. Linn, PhD, Department of Medicine, Center for the Health Sciences, UCLA, Los Angeles, CA 90024.

ABBREVIATIONS USED IN TEXT
AOA = Alpha Omega Alpha
HUMPTS = Humanistic Toward Patients Scale
HUMSTF = Humanistic Toward Staff Scale

house staff and faculty a letter describing the project and requesting participation. In hospital A, questionnaires were distributed by two medical students who contacted each potential respondent. In hospital B, contact was made by a postgraduate fellow or staff from the office of the training director.

Self-report Measures

After an extensive review of the literature, five self-report measures were selected for administration: the Hogan Empathy Scale,[12] the Physician Humanism Scale,[13] the Survey of Interpersonal Values (the benevolence subscale),[14] the Affective Communication Test[15] and the Care-Cure Orientation Index.[16,17] All scales met conventional standards of reliability and validity that have been described in greater detail elsewhere.[18] In the present study, the five instruments have been used together as a battery consisting of 119 items, with a mean score of 249, a standard deviation of 30 and a range of 173 to 326. The Hogan Scale is a measure of empathy from the California Psychological Inventory. The Physician Humanism Scale is a measure of physicians' attitudes toward social, medical and psychiatric issues. The benevolence subscale of the Survey of Interpersonal Values measures physicians' willingness to do things for or share with others and to be generous and help the unfortunate. The Affective Communication Test measures nonverbal expressiveness, and the Care-Cure index measures the degree to which physicians value caring for patients over curing them. This battery of measures does not require extensive medical training or expertise and can be completed by premed, medical school, postgraduate or practicing physician populations.

Faculty, Nurse and Patient Ratings

Faculty, nurse and patient ratings were obtained only on physicians in hospital A. In March and April 1985, 14 nonphysician staff members of a medical ambulatory care center independently evaluated each house staff and faculty physician currently seeing patients on two criteria: a seven-item Humanistic Toward Patients Scale (HUMPTS) and a six-item Humanistic Toward Staff Scale (HUMSTF). These scales had Cronbach's α-reliability coefficients of .92 and .90, respectively.[19]

In July through September 1985, patient satisfaction ratings were gathered from four new patients and three continuing patients seen consecutively by each house-staff and faculty physician in the same ambulatory care center in hospital A where the nonphysician ratings were obtained. The Art of Care Patient Satisfaction Scale consisted of nine items measured on a five-point Likert scale, had an α-reliability coefficient of .85 and has been described in detail elsewhere.[20,21]

Faculty evaluations of house-staff performance on inpatient ward rotations were collected for the period of July 1984 to September 1985. An average of ten evaluations per physician was available. This evaluation form consisted of 18 items, 8 measuring the technical quality of the physician's performance, 8 measuring humanistic performance and 2 items measuring general qualities. An overall rating of clinical competency was also assessed. All qualities and behaviors were assessed on a nine-point continuum from outstanding to unsatisfactory. The Humanism Scale consisted of the following eight items: cooperation with medical colleagues, cooperation with paramedical staff, physician-patient relationship, rendering of comfort and empathy, involvement of patients in decisions, consideration of patients' concerns, ability to put patients at ease and render comfort and integrity to admit errors. Cronbach's α-reliability coefficient for this scale was .97. We will present data for this humanism scale and for faculty physicians' ratings of overall clinical competence.

Demographic and Premedical School Experiences

All respondents were asked to indicate their race, sex, marital status, whether or not they had children and number of siblings. In the educational realm, they were asked whether or not they belonged to Alpha Omega Alpha (AOA), how many articles they had published in a scientific or scholarly journal, their level of training and the number of social science and humanities courses taken in college. They were also asked whether their parents were divorced and whether any member of their immediate families had died.

Respondents were also asked to indicate any experience they had had before medical school working in a physician's office, hospital or clinic, doing child care or working in a children's camp, helping the disadvantaged, teaching, working in a nursing home or with the elderly, working for a political party or in a political or social action movement.

In addition, physicians were asked to indicate how often as a child they were able to accurately anticipate what their parents were going to say before they said it, how often they were able to accurately complete sentences begun by their close friends or family and how often before going to medical school their friends confided in them about personal problems or turned to them for advice.

Hypotheses

Four general hypotheses were tested:

- There is no significant relationship between humanistic physician attitudes and behaviors and their demographic characteristics.
- Physicians with person-centered premedical school work or volunteer experience will have significantly higher humanism scores or ratings than physicians without such early work experience.
- Physicians who took more courses in the social sciences and humanities as undergraduates will have significantly higher humanism scores or ratings than physicians with less course work of that kind.
- Physicians with premedical school histories of being more empathic or having been used as a source of advice and confidence more frequently by their friends will have significantly higher humanism scores or ratings.

Results

Looking first at the correlations among measures of humanistic physician performance (and overall ratings of clinical competence), Table 1 clearly shows that the self-reported measures and the ratings made by nurses, faculty physicians and patients were all significantly intercorrelated.

TABLE 1.—*Pearson Correlation Coefficients Among the Self-reported Humanism Battery and Nurse, Faculty and Patient Ratings*

	Self-report Battery	Nurse Ratings		Faculty Ratings		Patient Ratings
		HUMPTS	HUMSTF	Humanism	Overall Competence	
Self-report Battery	...	.373* (N=64)	.383* (N=64)	.380* (N=50)	.383* (N=50)	.289* (N=74)
HUMPTS		...	.880† (N=85)	.420* (N=50)	.384* (N=50)	.330‡ (N=46)
HUMSTF			...	.390* (N=50)	.356* (N=50)	.320‡ (N=46)
Faculty humanism ratings				...	.816† (N=50)	.397* (N=35)
Overall competence					...	.414* (N=35)
Patient ratings						...

HUMPTS=Humanistic Toward Patients Scale, HUMSTF=Humanistic Toward Staff Scale

*$P<.01$.
†$P<.001$.
‡$P<.05$.

Sociodemographic and Educational Factors

Using the criterion of a .05 level of confidence, no significant relationship was found between any of our measures of humanistic performance and physicians' sex, race, marital status, number of children or a history of divorce or death in the immediate family. Physicians with more siblings, however, had significantly higher scores on the humanism battery ($r=.226, P<.01$).

With regard to educational background, all measures of humanistic performance were unrelated to AOA membership or the number of articles published. Humanistic performance was also unrelated to level of training with one exception: patient satisfaction with art of care was positively correlated with the year of training ($r=.266$, $P<.02$). When this finding was examined further, however, it was found that the statistical significance was due to the small subgroup of faculty physicians who attained very high patient satisfaction ratings. When they were excluded from the analysis, there were no significant differences among levels of training within the house-staff group. Finally, the number of humanities courses taken in college was significantly correlated with the self-reported humanism battery ($r=.173, P<.05$). Also, the number of social science courses taken was significantly correlated with the humanism battery ($r=.195, P<.02$) and with both nurse-rating scales (HUMPTS: $r=.275$, $P<.05$ and HUMSTF: $r=.426, P<.01$).

Premedical Work and Social Experience

In looking at the relationship between physicians' early work and volunteer experiences and their humanism scores and ratings, several interesting findings emerged. As shown in Table 2, physicians who had worked with the disadvantaged or the elderly or who had been involved in a political or social action movement had significantly higher scores on the self-reported humanism battery than physicians who did not have those premedical school experiences. Physicians who had previously worked in a physician's office, a hospital or with children (child care or camp) were rated by supervising faculty physicians on inpatient hospital rotations as being more humanistic than physicians without such experience. Also, overall ratings of clinical competence were significantly correlated with having had previous hospital experience. Patient satisfaction ratings of physicians' humanistic behavior were significantly more favorable among physicians who had worked with children or who had been involved in a social or political action movement. Nurses' ratings of physicians' behavior were generally uncorrelated with physicians' early work experience with one exception: nurses rated physicians who had worked for a political party as significantly less humanistic than those who had not been involved in politics. Finally, when all eight work experiences were combined into an index of work experience, premedical school work experiences were significantly related to higher scores on the humanism battery and higher faculty ratings of both humanistic performance and overall clinical competence (Table 2).

With regard to physicians' reports of the frequency with which they were able to accurately anticipate what their parents were going to say before they said it, Table 2 indicates no relationship between that ability and humanism scores or ratings. Physicians, however, who said they were able to accurately complete a sentence begun by close friends or family more frequently were rated by supervising faculty as being significantly more humanistic and more clinically competent. Finally, physicians who reported that before medical school their friends confided in them about personal problems or turned to them for advice more frequently had significantly higher humanism scores on the self-reported battery and were rated as being more humanistic by the nursing staff.

Discussion

With regard to the hypotheses to be tested in this report, our findings clearly support the confirmation of our first hypothesis: that there are no significant differences in humanism among postgraduate physicians with different demographic characteristics. Marital status, sex, race, number of children, AOA membership, number of articles published or year of training was unrelated to humanism scores or ratings. Therefore, at present there does not appear to be any rationale for using such demographic data to select medical students for postgraduate training to improve the output of humanistic physicians.

The absence of significant differences in humanism scores and ratings among interns and residents also suggests that humanistic attitudes and behaviors (and overall clinical com-

TABLE 2.—*Pearson Correlation Coefficients (and P Values) Between Measures of Humanism and Premedical Work and Social Experience*

Previous Work Experience	Self-report Battery (N=140)	Nurse Ratings		Faculty Ratings		Patient Ratings (N=75)
		HUMPTS (N=65)	HUMSTF (N=65)	Humanism (N=50)	Overall Competence (N=50)	
Physician's office	.098	.095	.045	.312*	.253	.100
Hospital	.076	.196	.080	.332†	.302*	−.058
Child care/camp	−.039	.101	.070	.311*	.083	.254*
Disadvantaged	.197†	.216	.182	.039	−.005	.120
Teaching	.109	.154	.139	−.026	.188	−.030
Elderly/nursing home	.166*	.059	−.031	.181	.182	−.005
Political party	.005	−.250*	−.292†	−.025	.068	−.077
Political/social action	.207‡	−.063	.042	.144	.175	.249*
Work Experience Index§	.216‡	.169	.102	.333†	.322†	.162
Anticipate what parents would say	.022	.119	.039	.082	.134	.084
Accurately complete sentences of others	.024	.154	.039	.328†	.317†	.154
How often friends confided in you	.228‡	.280†	.279†	.003*	−.074	.073
How often people sought your advice	.188*	.315‡	.300†	−.001	−.086	.050

HUMPTS=Humanistic Toward Patients Scale, HUMSTF=Humanistic Toward Staff Scale

*$P<.05$.
†$P<.02$.
‡$P<.01$.
§The sum of the 8 specific work experiences.

petence) might have already matured and developed by the internship year and are not likely to change through postgraduate training. Although a longitudinal study is necessary to confirm this interpretation, these data suggest that in preparing more humanistic physicians, residency programs would be more successful if they recruited and selected more humanistic medical students rather than to expect house staff to develop humanistic attitudes and behaviors or make major changes in them during the postgraduate training experience.

Our second hypothesis stated that physicians with more person-centered or "humanitarian" premedical school work or volunteer experiences would have significantly higher humanism scores and ratings. The data in this report provide some confirmation for this hypothesis although involvement in a political party seems to have a potentially negative effect. Our list of work experiences was by no means exhaustive, but the positive associations of many of such early experiences with self-reported and faculty ratings indicate that gathering historical data on medical students' premedical interpersonal and work-related experiences might be useful in predicting humanistic performance. More work needs to be done in identifying and measuring appropriate historical behavioral data and looking at their predictive validity over time.

The third hypothesis, which stated that the number of social science and humanities courses taken in college would be positively correlated with humanism scores, was also partially confirmed, as was the fourth hypothesis, which stated that a previous history of empathic or help-rendering behavior would be positively associated with ratings of current humanistic performance.

What implications do our findings have for assessing the humanistic performance of postgraduate physicians? The modest but significant intercorrelations between the different evaluation sources including physicians themselves indicate that all have some validity. The modest correlations among sources indicate, however, that no single one should be relied on exclusively or be considered as the gold standard. There seems to be empiric justification for combining information from nurses, patients, supervising faculty and postgraduate physicians themselves to arrive at a more complete and thorough assessment of humanistic performance. Each source has a slightly different perspective on what is humanistic and each can provide insights that can lead to a more comprehensive assessment of a very large and complex set of values, attitudes and behaviors.

What implications do our findings have for using humanistic criteria in selecting medical students for postgraduate training? Again, cross-sectional data, small sample sizes and data from only two highly competitive training programs limit the generalizability of our findings. The significant relationship, however, between all our measures of humanism (including the self-reported battery) and faculty ratings of overall clinical competence suggests that placing more weight on humanistic criteria will not be at the expense of preparing less technically competent physicians. Of course, the findings in this report are based on physicians who have already been accepted into a competitive training program and selected on the basis of traditional academic criteria. Placing more weight on humanistic criteria does not mean that less emphasis should be placed on academic criteria that are currently or routinely used. By adding humanistic criteria, we may be able to increase the output of technically and clinically competent physicians who are also humanistic. Of course, what happens to physicians after residency training cannot be determined from this research.

Finally, the present study has shown that humanistic attitudes and values can be reliably and validly measured by self-report. Together with premedical historical data on course work, premedical work and interpersonal experiences, these or similar materials may be useful to postgraduate training directors or medical schools in selecting students for their educational training programs. Perhaps selection committees in these educational institutions should place more emphasis on applicants' personal data and life experiences, considering them as "hard criteria," and place less emphasis on deans' letters, letters of recommendation and interview data, all of which have been shown to have little predictive validity of clinical or humanistic performance.[22-25] Gathering

personal data and using standardized measures of humanistic attitudes and behaviors require about 30 minutes of respondent time to complete and could be required as part of the application process to either medical school or residency training. There is a need to conduct longitudinal experiments using such data to determine whether or not the number of humanistically oriented, clinically competent physicians can be increased through the addition of humanistic measures to the application and selection process.

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